Final Year Project Report



UOK Alumni Portal Website and Android Application

BACHELOR OF SCIENCE

in Computer Science

Submitted By

Asma Riaz	B15158008
Fizza Naqvi	B15158013
Rimsha Ishtiaq	B15158064
Syeda Igra Waseem	B15158076

Supervised by

DR. M. SADIQ ALI KHAN

DEPARTMENT OF COMPUTER SCIENCE UNIVERSITY OF KARACHI 2019

ABSTRACT

As of 2019, the University of Karachi does not have an online Alumni Portal which lead us to creating one. UOK Alumni Portal is an online website and android application which serves the purpose of connecting Alumni of Karachi University over a single official platform. This Portal has been built to be integrated with the main University of Karachi website. The Alumni Portal serves multiple functionalities for both the Alumni and the Administrator of the system. Hence, we have divided this project into two main sections: Alumni Module and Administrator Module.

Alumni Module serves all functionalities that a registered Alumnus can perform. An Alumnus can view his automatically generated CV, make changes to his CV, change his personal and basic information. Alongside these main functionalities, an Alumni is able to communicate with other alumni by sending messages, he can search for his fellow Alumni, post and view job opportunities and get news from the Administration of UOK regarding any upcoming events.

Administrator Module, on the other hand, is able to view all data of all Alumni that have been registered onto the portal. The main functionality that the admin is able to perform is generating reports. He can generate reports of all the data that is present into the system. Whether he wishes to generate individual report or overall reports, he can do so in many different formats. Furthermore, He can locate Alumni based on searching criteria such as searching based on department name, profession etc. The admin can post news that will be displayed to all Alumni in the portal. The admin can also change his own account settings. All the important data regarding the Alumni or Administrator is stored on a local database; separately for website and android maintaining the database format.

This report defines the complete functionality and performance of the system. In this report, we have discussed in detail the how and what of the system. This report also contains the interfaces of both website and android application.

CERTIFICATE OF COMPLETION

This is to certify that the following students

Asma Riaz	B15158008
Fizza Naqvi	B15158013
Rimsha Ishtiaq	B15158064
Syeda Iqra Waseem	B15158076

have successfully completed their final year project named

UOK Alumni Portal Website and Android Application

In the partial fulfillment of the Degree of Bachelor of Science in Computer Science

	Signature & Seal of Supervisor
Name:	
Department	
Email	
Mobile No.	

Date

ACKNOWLEDGEMENT

We first extremely thank ALL MIGHTY ALLAH for giving us the strength and ability to be able to create this project successfully. He provided us with the knowledge, the energy and healthy state of mind to be able to think, solve problems and overcome whatever obstacles came in our way. He brought our project development team together so that we can work alongside each other with great zeal and zest. He looked over our shoulders during all the hardships that came along the way and made our university and our teachers a source of reassurance during the hard times.

We are extremely appreciative of our team members who took on the responsibility of creating this project with great eagerness. Each and every member gave their complete time, energy and all the knowledge that they had in constructing a project that will prove to be beneficial in the future. We are also appreciative of our parents for helping us in providing the facilities we needed to complete our final year project. We are thankful of them for believing in us at every step of the way.

Finally, we are very thankful to our teachers for sharing their knowledge and wisdom with us which became a fuel for creating our project. We are thankful for all the guidance they gave us throughout our graduation. We are also thankful to all the staff of UBIT who made sure that we were able to gain knowledge comfortably throughout the premises. Finally, we are utterly thankful to our chairman who helped us, guided us and managed the difficult tasks for us that we had no control over.

TABLE OF CONTENTS

Abstract	1
Certificate of Completion	2
Acknowledgement	3
Table of Contents	4,5
List of Figures	6,7
List of Tables	8
List of Keywords	9
1. Introduction	10
1.1 Scope	10
1.2 Motivation	10
1.3 Aim and Objective	10
1.4 Outline of the Project	10
2. System Analysis	11
2.1 Software Requirements	11
2.2 Hardware Requirements	11
2.3 System Limitations	11
2.4 Project Risks	11
2.5 Use Case Diagram	12
3. Project Description	13
3.1 Project Overview	13
3.2 Agile Methodology	13
3.3 Process Model	13
3.4 Agile over Waterfall	14
3.5 State Diagram	15
3.6 Sequence Diagram	16,17
3.7 Component Diagram	18
3.8 ER Diagram	18
4. Project Features	19
4.1 UOK Alumni Features	19-25
4.2 Functional Requirements	25
4.3 Non-Functional Requirements	26
5. Project Costing	27
5.1 COCOMO	27
5.2 Basic COCOMO	27
5.3 The Development Modes	27

5.4 Basic COCOMO Model: Formula	27,28
5.5 UOK Alumni Portal: Project Costing	28
6. User Interface Screens	29-47
7. Conclusion and Future Enhancements	48
7.1 Conclusion	48
7.2 Future Enhancements	48
Appendix: User Manual	49

LIST OF FIGURES

Figure 2.5: UOK Alumni Portal Use-Case Diagram	1
Figure 3.2: Agile Cycle	1
Figure 3.3: Extreme Programming Methodology	1
Figure 3.5.1: Alumni Portal State Diagram	1
Figure 3.5.2: Administrator Module State Diagram	1
Figure 3.6.1: Alumni Sequence Diagram	1
Figure 3.6.2: Administrator Module Sequence Diagram	1
Figure 3.7: Project Component Diagram	1
Figure 3.8: ER Diagram	1
Figure 4.1.1: Alumni Portal Module Overview	1
Figure 4.1.2: Administrator Module Overview Diagram	1
Figure 6.1.1: Alumni Sign Up – Initial Step	29
Figure 6.1.2: Alumni Sign Up – Step 1	29
Figure 6.1.2: Alumni Sign Up – Step 2	30
Figure 6.1.3: Alumni Sign Up – Step 3	30
Figure 6.1.4: Alumni Sign Up – Registration Successful	30
Figure 6.2: Alumni Login Screen	31
Figure 6.3.1: Forgot Password	31
Figure 6.3.2: Code Verification	32
Figure 6.3.3: Update Password	32
Figure 6.3.4: Password Changed Successfully	33
Figure 6.4: Alumnus Profile Page	33
Figure 6.5: View Alumnus CV	34
Figure 6.6.1: Edit CV – View 1	34
Figure 6.6.2: Edit CV – View 2	34
Figure 6.6.3: Edit CV – View 3	34
Figure 6.7: Messages	35
Figure 6.8.1: Jobs Feed / Post Job	36
Figure 6.10.2: Alumnus Account Settings	37
Figure 6.11: Administrator Login Page	38
Figure 6.12: Administrator Module	39
Figure 6.8.2: My Jobs	40
Figure 6.9: News Feed	40

Figure 6.10.1: Verify Password	41
Figure 6.13: Search Alumni	42
Figure 6.14: Alumni Report	43
Figure 6.15: Individual Alumnus Report	44
Figure 6.16: Post News	45
Figure 6.17: Administrator Account Settings	45
Figure 6.18: Splash Screen	46
Figure 6.19: Alumni Login	46
Figure 6.20: Account Password Recovery	47
Figure 6.21.1: Alumni Sign Up Step 1	47
Figure 6.22.2: Alumni Sign Up Step 2 & 3	47
Figure 6.23.1: Alumni Profile	47
Figure 6.23.2: Navigation Drawer	48
Figure 6.24.1: View CV	48
Figure 6.24.2: CV PDF	48

LIST OF TABLES

Table 2.1: Software Requirements	11
Table 4.1.1: Basic Information	20
Table 4.1.2: Educational Information	20
Table 4.1.3: Professional Information	20
Table 4.1.9: Account Settings Information	22
Table 4.1.12: Alumni Searching Criteria	23
Table 4.2: UOK Alumni Functional Requirements	25
Table 5.4: COCOMO Coefficient values	28
Table 5.5.1: Project Costing - Website	28
Table 5.5.2: Project Costing – Android Application	28

LIST OF KEYWORDS

UOK - University of Karachi

CV - Curriculum Vitae

XP - Extreme Programming

ASP - Active Server Pages

SQL - Standardized Query Language

SDK - Software Development Kit

IOS - iPhone Operating System

ER - Entity Relationship

CNIC - Computerized National Identity Card

COCOMO - Constructive Cost Model

LOC - Line of Code

KLOC - Kilo of Line of Code

KDSI - Thousands of Delivered Source Instruction

1. INTRODUCTION

This chapter briefly defines the overview of our application. In this chapter, we will discuss the motivation for creating this project, the main objective, scope, aim and outline of the project.

1.1. Scope

Alumni web portal is an online website and android application that helps alumni of Karachi University interact with each other. The users registered onto this portal can generate their CVs, post and receive job opportunities, get news from UOK administration and communicate with other alumni registered onto this portal. All the alumni data is stored onto the local databases on both our website and android application. The administration of UOK is also given access to post news, search alumni and generate single and multi-user reports.

1.2. Motivation

Every single university of the world has built an online Alumni Portal for its Alumni so that they can stay connected with the university even after graduation. Unfortunately, as of 2019, University of Karachi does not have such a platform. This particular requirement gave us an idea to create an online platform where only the Alumni of University of Karachi can interact with one another. The idea of creating such a Portal and fulling the requirement of our own University became our motivation for the project

1.3. Aim and Objective

Our main objective is to create an online portal for the Alumni of University of Karachi where they can connect with one another, generate their CVs and post job opportunities etc. Our aim is to develop a fully well-functioning website and android application that provides the most up-to-date functionality that most alumni portals of the world fail to provide. We hope to achieve our aim through this project.

1.4. Outline of the Project

To construct this particular project, we have used agile methodology, particularly the Extreme Programming model. Extreme Programming helps our team produce higher quality software and respond well to frequently changing customer requirements. Our team is composed of 4 individuals which have been divided into website development and android development areas which is why we have used the approach of pair programming according to the XP model.

Every single module is defined as a single iteration of our product. Iteration planning is done as an initial step, and then follows the design of this particular module. A stand-up meeting is held discussing the plan for the particular iteration which is followed by the implementation. For programming and testing, two people work on the iteration, frequently interchanging the important tasks and then releasing the completely tested and developed module.

2. SYSTEM ANALYSIS

In this section, we will discuss the limitations of the system and the requirements upon which the system is built. We will also discuss the development team organization and their roles.

2.1. Software Requirements

Operating System	Windows
Browsers	All modern browsers
Website	Visual Studio / ASP.NET / C# / JQuery / JavaScript /
	SQL Server
Android	Android Studio / Java / SDK 19 or higher

Table 2.1: Software Requirements

2.2. Hardware Requirements

- Laptop or PC Screen
- Smart Phone / Touch Screen

2.3. System Limitations

- Only University of Karachi's Alumni can use this application and website.
- The app isn't available for IOS.
- Currently enrolled Students can't interact with Alumni on this portal.
- Teachers who aren't Alumni of University of Karachi can't interact with Alumni.
- Website is compatible with windows only.

2.4. Project Risks

• Social Media groups and pages

People using social media groups and pages as a source of communication and sharing might not be interested in joining UOK Alumni Portal.

• Load balancing

The application and website might not perform as required if multiple users simultaneously try to access it.

Data Security

Alumni CVs contain private data which could be retrieved by ultimate hackers. Chat messages should also be encrypted.

Fake Job posts

Alumni could post fake job opportunities that the system is not able to correct or handle.

2.5. Use Case Diagram

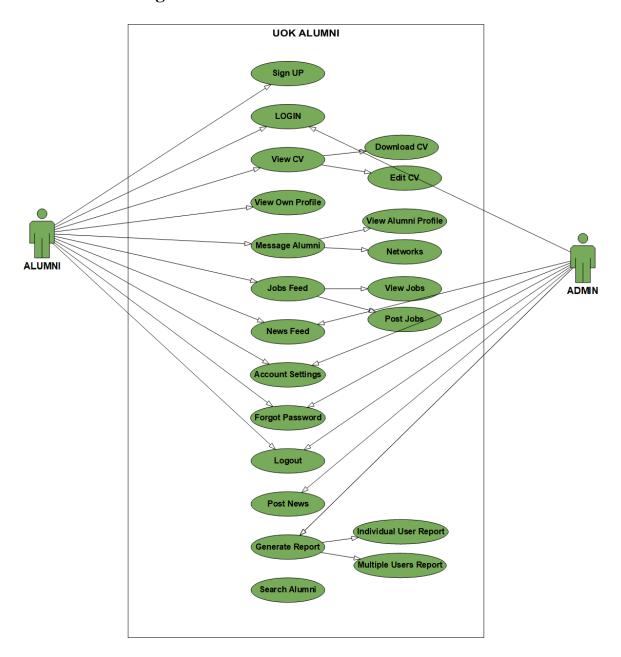


Figure 2.5: UOK Alumni Portal Use-Case Diagram

3. PROJECT DESCRIPTION

In this section, we will discuss the development of this project in light of software engineering techniques. We will discuss the methodologies, process model details and will describe the project with respect to certain diagrams.

3.1. Project Overview

Every single software project, in this decade, must be constructed based on the software development life cycle. UOK Alumni Portal is a similar project. For the development of this project, we have followed certain software development methodologies and a suitable process model that we will discuss in this chapter. Using these techniques helped us build an efficient team and working environment which led to the creation of a well-functioning product.

3.2. Agile Methodology

Agile software development is an approach to software development under which requirements and solutions evolve through the collaborative effort of self-organizing and cross-functional teams and their customer/end user. UOK Alumni uses agile methodology because of frequently changing customer requirements and decentralized team.

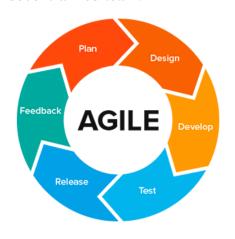


Figure 3.2: Agile Cycle

Agile methodology goes through several phases but the product is divided into iterations. Each iteration is planned and designed. Then follows the development and testing of that particular iteration. After the iteration is released, customer feedback is valued and if any changes are required, the agile cycle goes on again until the desired product is developed.

3.3. Process Model

Following the agile approach, the most suitable process model for this product seemed to be Extreme Programming.

EXTREME PROGRAMMING

Extreme Programming (XP) is an agile software development framework that aims to produce higher quality software, and higher quality of life for the development team. XP is the most specific of the agile frameworks regarding appropriate engineering practices for software development.

For our particular decentralized team, XP proved to be the most suitable and beneficial as our team is composed of 4 team members. We divided our team into groups of 2 (each containing 2 members). Each group handled the main two parts of the product: website development and android application development. We applied the approach of pair programming, exchanging important tasks and handling software testing in pairs.

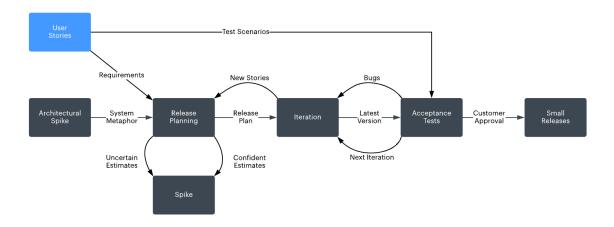


Figure 3.3: Extreme Programming Methodology

Extreme programming intakes user stories which are basically the main functionality of the system divided based on priority. The functionalities are constructed into iterations. Iterations are planned and designed and then forwarded to the development team. The team works in pairs to implement the functionalities and then tests each unit separately. Acceptance testing is performed and if the customer approves the production of the iteration, the iteration is released.

3.4. Why use Agile methodology over the traditional Waterfall Model?

The main benefit is the ability to change dynamically to the customer's wants and needs. Agile focuses on the features that are of the highest value to the customer. It provides a short-fixed timeline that allows for immediate feedback from the customer and the ability to move deliverables into production. The waterfall model does not offer much of the customer interaction at every phase of the software development process.

3.5. State Diagrams

ALUMNI PORTAL

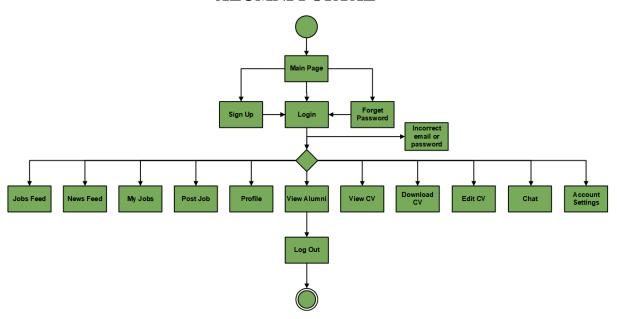


Figure 3.5.1: Alumni Portal State Diagram

ADMINISTRATOR MODULE

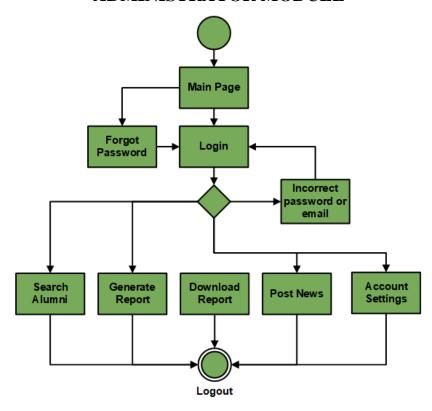


Figure 3.5.2: Administrator Module State Diagram

3.6. Sequence Diagrams

ALUMNI PORTAL

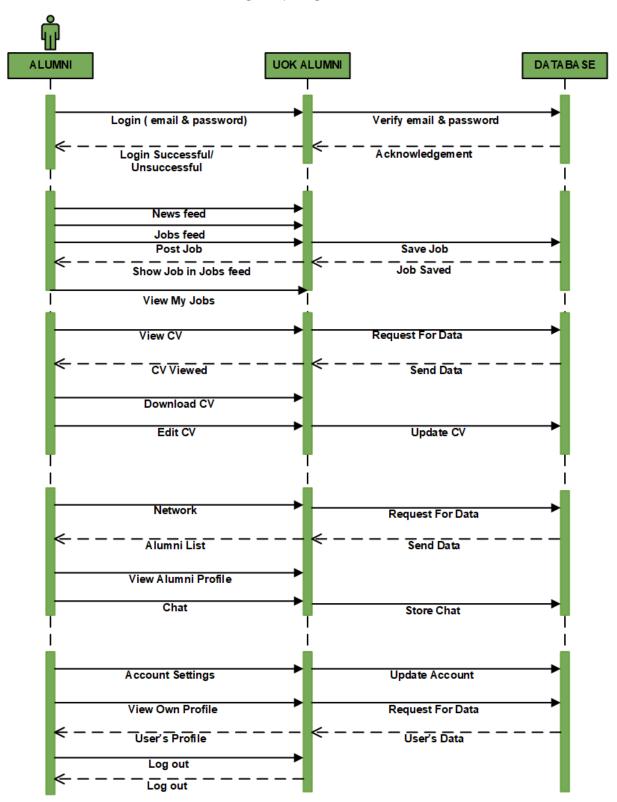


Figure 3.6.1: Alumni Sequence Diagram

ADMINISTRATOR MODULE

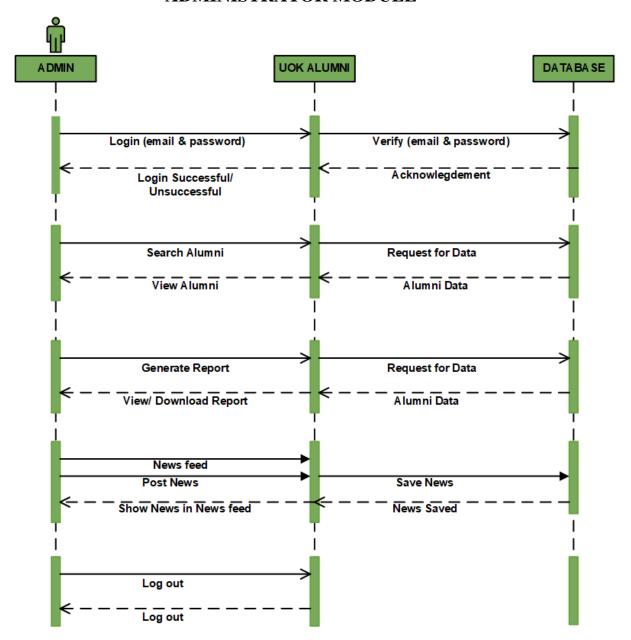


Figure 3.6.2: Administrator Module Sequence Diagram

3.7. Component Diagram

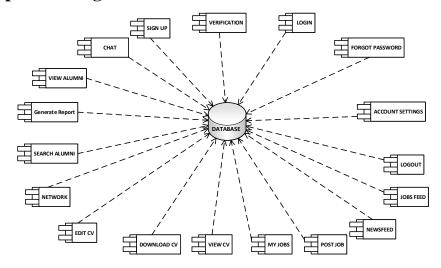


Figure 3.7: Project Component Diagram

3.8. ER Diagram

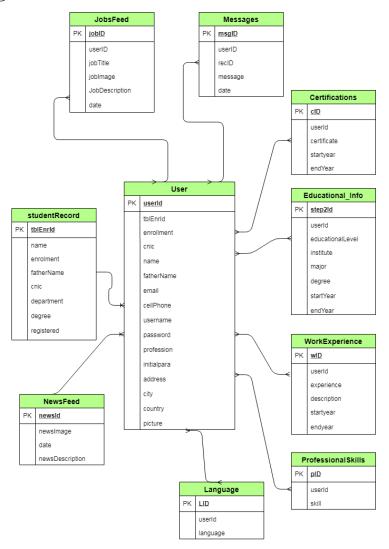


Figure 3.8: Project ER Diagram

4. PRODUCT FEATURES

In this section, we will discuss the main functionality and features of the system. We will describe in detail what actions the system performs to certain inputs and what outputs it generates. We will discuss the functional and non-functional requirements and complete working of every single module of the system.

4.1 Features

UOK Alumni Web Portal has been divided into two main parts: Alumni Portal and Administration Panel. We will describe these two main parts separately and discuss all of their main features and working respectively.

ALUMNI PORTAL

The Alumni Portal comprises over 10 features which have been divided across multiple modules. Following is the module overview of Alumni Portal:

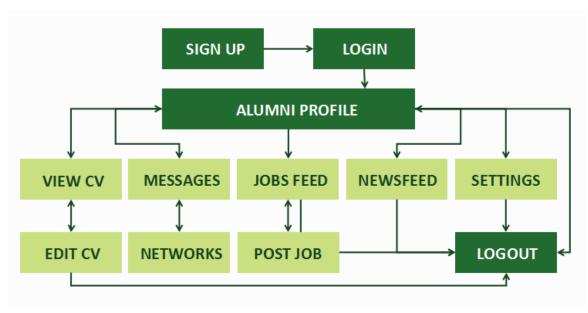


Figure 4.1.1: Alumni Portal Module Overview

4.1.1 Alumni Sign Up

In order to be a part of the Alumni Portal, all users must first register themselves properly. Alumni Sign Up module is a 3 step registration form that requires the users to fill in some important information which is later on used to generate their profiles and CVs. Let us look at these three steps separately.

Initial Step: Enrolment and CNIC Registration

Before registering to UOK Alumni Portal, the user must get his University enrolment number and CNIC number verified. Both these information are stored

prior into our system. When the user enters this information into the required fields, the user input is verified with the information in our database. If verified, step 1 of registration form is displayed. If not, the user cannot sign up.

Step 1: Basic Information

After the user's enrolment and CNIC is verified, the user is required to enter his basic information which is as follows:

Email ID	Required to create alumni's account
Contact Number	Required to add in user's CV
Username	Required to add in user's profile
Password	Requested at the time of user login
Confirm Password	Password confirmation field

Table 4.1.1: Basic Information

The user's Full Name and Father's Name is already loaded into the respective fields from the database.

Step 2: Educational Information

After adding his basic information, the user proceeds to step 2 which is entering of educational information. The user can add up to 5 different educational information which includes the following:

University	Institute name major degree and years studied
High School	Institute name, major, degree and years studied. Used in user's CV.
School	Osed III user's CV.

Table 4.1.2: Educational Information

Step 3: Professional Information

Step 2 is followed by Step 3 which is Professional Information. This professional information is required for building up the user CV. The user can add up to 4 of each data. It contains the following fields:

Work Experience	User's work experience in his life
Professional Skills	User's professional skills in his area of work
Languages	Languages the user speaks
Password	Certificates achieved by the user in his area of work

Table 4.1.3: Professional Information

This step also requires user to select an image for his profile.

Final Step: Email Verification

After filling out all the important information, the user is required to check the email that he entered for email verification. A code is generated and sent to his email. When the user enters the code in the required field, his account is verified and created, and the user can then proceed to login.

4.1.2. Alumni Login

After the user has completed the registration process, he can now login into the system. The Alumni must enter their registered email and password in order to login. The login form also provides Alumni the facility to view their password during typing.

Forgot Password

If the user has somehow forgotten his password, he can also retrieve it by clicking on forgot password link within the Login form. He must send a request for new password which is granted by the system by verifying his email and then allowing the user the ability to change his password.

4.1.3. Alumni Profile

After login, the alumni can view his profile page. His profile page contains all his basic information that he previously entered in the sign up form, his profile picture and a navigation bar/drawer through which the user can navigate to all other modules/features of the system.

4.1.4. View CV

All the information that the user entered during registration process is stored into our database. When the user then logs into his account, his CV is automatically generated retrieving all his information from the database. The information is loaded into the CV template and adjusted accordingly. When the user clicks View CV feature, he can see his newly generated CV. He can also navigate to Edit CV page if he requires changing any information. The Alumnus can also download his CV in PDF format.

4.1.5. Edit CV

All of user's CV information is loaded into the Edit CV form. This form contains all the fields previously described in Table 4.1.1 to Table 4.1.3. If the user wishes to change any information or enter more as per need, he can do so in the Edit CV form. After he saves the changes, his information is updated and hence, a new CV is generated.

4.1.6. Messages

The messages feature contains a list of all the Alumni connected to each other via this Portal. In the list of networks, the Alumni Profile picture and name is displayed. Any Alumni on the Portal can contact any other Alumni within the same portal. Alumni can message and chat with each other via this feature. The Alumni can also view each other's profile pages through this feature just by clicking the "view profile" button.

4.1.7. Jobs Feed

Jobs feed is a module where jobs are managed. Alumni can post jobs in this feature. They can post jobs containing text, description and links. They can also post images of the jobs they are offering. Anybody in the Portal can post any jobs and hire anybody through this feature. If an alumnus has posted a job, all other Alumni within the portal can see it. An Alumnus can also view his own posted jobs in a separate page within the same module.

4.1.8. News Feed

News feed is a page for Alumni to view only. The Alumni, through this news feed page, can get any important news or event news posted by the administration of University of Karachi. The Alumni are NOT given access to post news themselves. Posting is restricted to administration of UOK.

4.1.9. Account Settings

Through this page, the Alumni can change his account settings which include his profile information and his login information. Before changing the account settings, the alumnus must enter his password once again to confirm that he is in fact, currently in charge of the account. The account settings include:

Personal Information	Password Information
Username	New password
Profession	Confirm new password
Contact Number	
City	Profile Picture
Country	

Table 4.1.9: Account Settings Information

4.1.10. Alumni Logout

By clicking the logout button on the navigation bar, the Alumni can logout of the system and the session between them and the system is broken. If he wishes to use the portal again, he must Login again through the Login page.

ADMINISTRATION MODULE

Despite our system mainly being an alumni portal, we still required an administrator panel so that an administrator of UOK can search alumni, read records and generate reports. The admin panel is a separate part of our system that has been provided with different functionality in contrast to the alumni portal.

There is only one administrator in our system. The administrator is assigned an email and password without the need for him to register. Following is an overview of the admin panel:

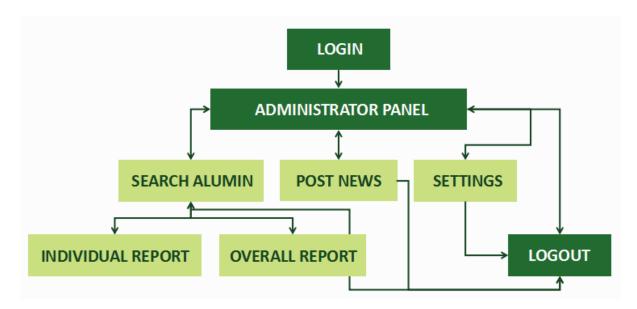


Figure 4.1.2: Administrator Module Overview Diagram

4.1.11. Administrator Login

The administrator login is identical to the Alumni Login. The admin can also login through the same Login module. He must enter his assigned Login email ID and password. Once verified, he is redirected to the admin panel.

4.1.12. Search Alumni

After login, the first page the admin is able to view is the Search Alumni page. This page contains a table of all alumni that have been registered into our and system. The table shows all details of every individual. Since the table may contain data of thousands of users, It will be impossible for the admin to search a specific individual manually. Hence, Search Alumni tab contains a panel holding the searching criteria. The admin can search alumni based on the following criteria:

Alumni Name	Department	Email
Major	Enrolment Number	CNIC Number
Profession	City	Country

Table 4.1.12: Alumni Searching Criteria

Once the admin clicks the search button, the table containing all alumni data is modified and truncated to display only the searched alumni.

4.1.13. Generate Data Reports

Report generation is a major part of the administrator panel. An admin can generate several reports; all of them containing alumni information. The difference between each report is described below:

All Alumni Report:

The administrator can generate a report containing data of all users registered into our system. The generated report is displayed in a table format but it can be downloaded in three different formats: PDF, DOCX and XSL.

Searched Alumni Report:

This report is similar to the all alumni report and can be downloaded in the same formats. But the only difference is that it contains data of all those alumni that the administrator has searched based on the searching criteria.

Individual Alumnus Report:

Individual Alumnus Report can be generated by selecting a single row from the overall alumni data table. When the select button is clicked, the page redirects to the individual Alumnus report containing all the basic, educational and professional information of the particular alumnus. This report is basically identical to the alumni CV but generated as a report format. This report can only be downloaded in a PDF format.

4.13. Post News

The News Feed displayed in our alumni portal is also displayed in the administrator panel. The only difference is that the administrator is allowed to post news in the news feed. These posts are then forwarded to all Alumni within the Alumni Portal. The administrator can post news updates and events in both text and picture format. The news forwarded is displayed to all alumni along with administrator name and date/time posted.

4.14. Account Settings

Just like the Alumni, administrator can also change his account settings but his settings are comparatively less than the alumni. The administrator can change his password and his profile picture.

The administrator is not directly linked to all alumni. He is only a part of this system to manage alumni records and reports.

4.2 Functional Requirements

Functional Requirements in our system refers to the main functionality that each module has to offer. These requirements are mainly our customer requirements which, after implementation, have formed a part of the module features.

ID	Requirement Statement	Priority
FR001	The user can Login onto the portal using their email and password. If they have forgotten their password, they can request a new one on the Login form.	High
FR002	The user can create an account on the UOK Alumni. He/she requires his/her university enrolment number and CNIC number to verify if he/she belongs to the university.	High
FR003	CV should be generated just after user's registration.	High
FR004	Upon login, the user gets access to his own profile.	High
FR005	Upon login, the user should be able to view other alumni profile.	Medium
FR006	In Jobs feed section, Alumni can post and view all jobs.	High
FR007	In My Jobs section, user can see only his posted jobs.	Medium
FR008	Alumni can chat with each other.	Medium
FR009	Alumni can view other alumni in Message section.	Low
FR010	All the chats of user are stored in Messages section.	Low
FR011	Alumni can be searched by search option.	Medium
FR012	Alumni can edit their own CVs.	High
FR013	Account Settings option let user change his/her basic information, profile picture and password as well.	Medium
FR014	User can log out whenever he/she wants.	High

Table 4.2: UOK Alumni Functional Requirements

4.3 Non-Functional Requirements

Non-functional requirements (NFRs) are the **requirements** that specify criteria that can be used to judge the operation of a system rather than specific behaviors. **Non-functional requirements** are often called "quality attributes" of a system. Our project has the following non-functional requirements:

Security

Only authorized users can access the system using their email and password. After login, the user can access only his/her profile.

Performance

The system should response to the user within 5 seconds.

User-friendly

The system should be easily interactive and easy to use for the user/administrator.

Maintainability

The database can be easily maintained, and backup is provided for all records.

Availability

The system should be available 24/7.

Correctness

The database should retrieve and store the correct data regarding each user. The system should provide correct information to correct users.

5. PROJECT COSTING

In this section, we calculate our project's estimated cost using COCOMO costing method. We will explain all the steps involved in carrying out this process.

5.1. COCOMO

COCOMO is one of the most widely used software estimation models in the world. It was developed by Barry Boehm in 1981. COCOMO predicts the effort and schedule for a software product development based on inputs relating to the size of the software and a number of cost drivers that affect productivity.

5.2. Basic COCOMO

Basic COCOMO is goof for quick, early, rough order of magnitude estimates of software costs. It does not account for differences in hardware, constraints, personnel quality and experience, use of modern tools and techniques, and other project attributes known to have a significant influence on software costs, which limits its accuracy.

5.3. The Development Modes

Organic Mode

- Relatively small, simple software projects
- Small teams with good application experience work to a set of less than rigid requirements.
- Similar to the previously developed projects.
- Relatively small and requires little innovation.

Semidetached Mode

Intermediate (in size and complexity) software projects in which teams with mixed experience levels must meet a mix of rigid and less than rigid requirements.

Embedded Mode

Software projects that must be developed within a set of tight hardware, software and operational constraints.

5.4. Basic COCOMO Model: Formula

$$E = a_b (KLOC \text{ or } KDSI)^b_b$$

 $D = c_b (E)^d_b$
 $P = E / D$

where E is the effort applied in person-months, D is the development time in chronological months, KLOC / KDSI is the estimated number of delivered lines of code for the project (expressed in thousands), and P is the number of people required.

The coefficients a_b , b_b , c_b and d_b :

Software Project	$\mathbf{a}_{\mathbf{b}}$	$\mathbf{b_b}$	$\mathbf{c_b}$	$\mathbf{d}_{\mathbf{b}}$
Organic	2.4	1.05	2.5	0.38
Semi-detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

Table 5.4: COCOMO Coefficient values

5.5. UOK Alumni Portal: Project Costing

Website:

LOC = 11996

Mode	Effort	Schedule	Person
Organic	32.6100 PM	9.3975 Months	3
Semi Detached	48.50698 PM	9.72683 Months	5
Embedded	71.01008 PM	9.78053 Months	7

Table 5.5.1: Project Costing - Website

Android Application:

LOC = 42952

Mode	Effort	Schedule	Person
Organic	124.5526 PM	15.6377 Months	8
Semi Detached	202.584 PM	16.0418 Months	13
Embedded	328.4465 PM	15.9664 Months	20

Table 5.5.2: Project Costing – Android Application

6. USER INTERFACE SCREENS

In this section, we have attached the project's interface screens for visualization of project features and modules.

WEBSITE - ALUMNI PORTAL

6.1 Alumni Sign Up

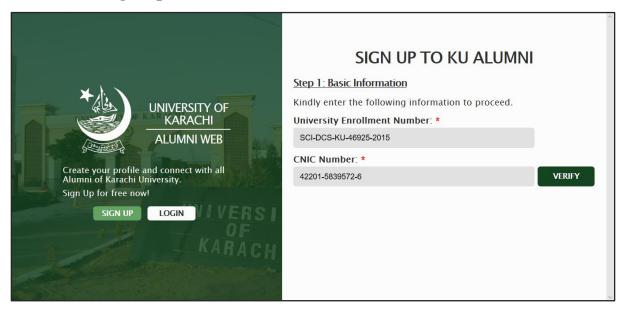


Figure 6.1.1: Alumni Sign Up – Initial Step

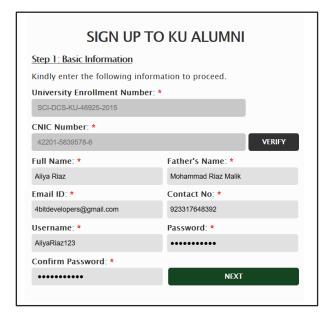


Figure 6.1.2: Alumni Sign Up – Step 1

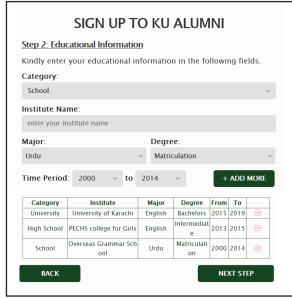


Figure 6.1.2: Alumni Sign Up – Step 2

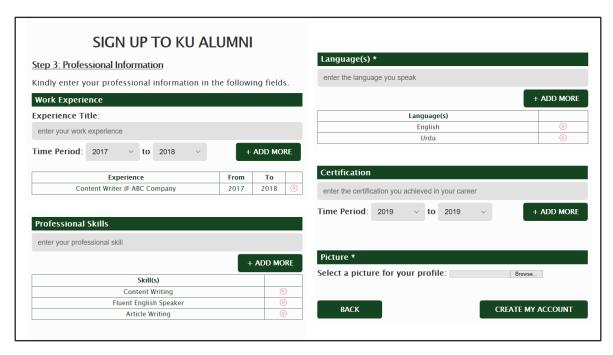


Figure 6.1.3: Alumni Sign Up – Step 3

Registration Successful!

Re-directing you now to Login page...

Figure 6.1.4: Alumni Sign Up – Registration Successful

6.2 Alumni Login



Figure 6.2: Alumni Login Screen

6.3 Forgot Password

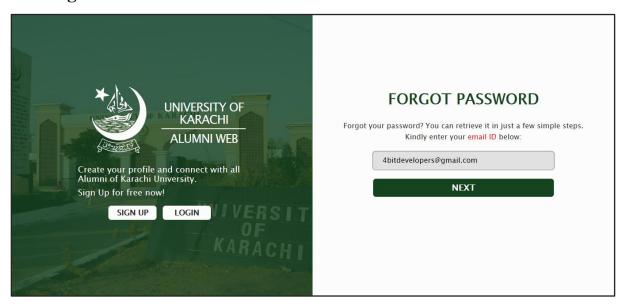


Figure 6.3.1: Forgot Password

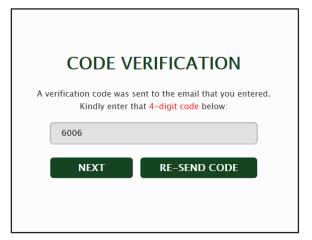




Figure 6.3.2: Code Verification

Figure 6.3.3: Update Password

Your password has been changed successfully.

Re-directing you now to Login page...

Figure 6.3.4: Password Changed Successfully

6.4 Alumnus Profile

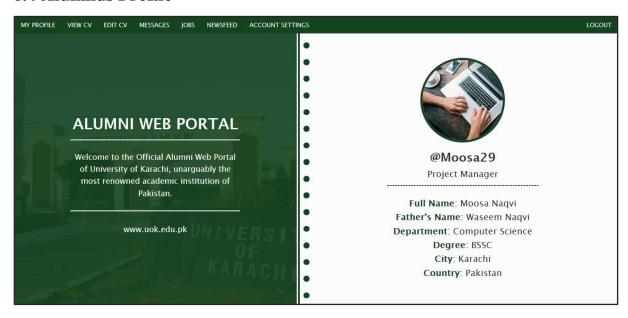


Figure 6.4: Alumnus Profile Page

6.5 View CV

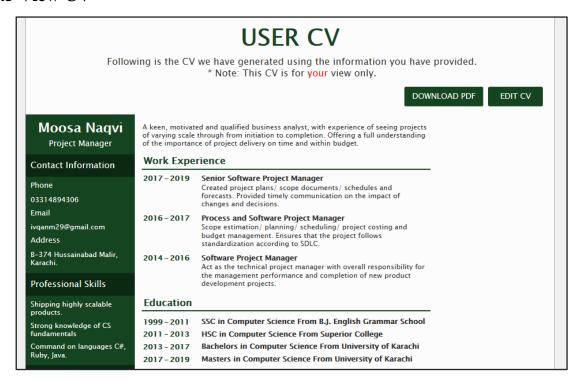
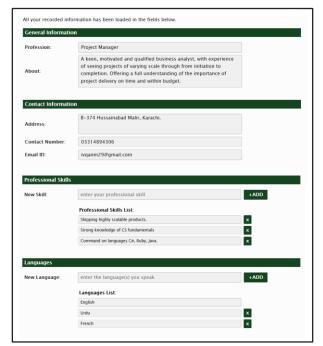


Figure 6.5: View Alumnus CV

6.6 Edit CV



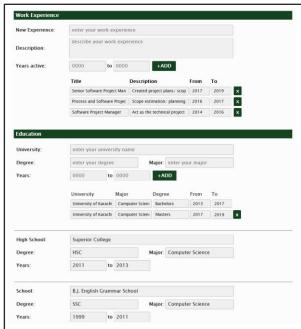


Figure 6.6.1: Edit CV – View 1

Figure 6.6.2: Edit CV – View 2

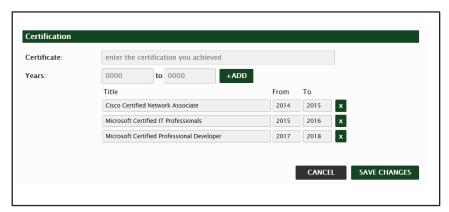


Figure 6.6.3: Edit CV – View 3

6.7 Messages

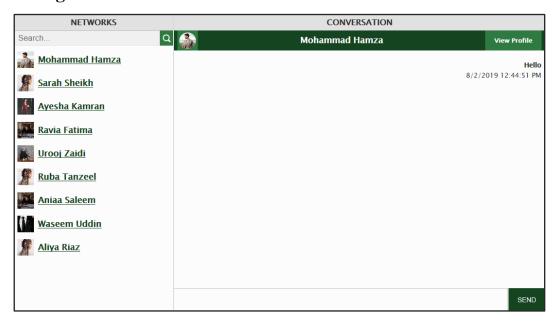


Figure 6.7: Messages

6.8 Jobs Feed

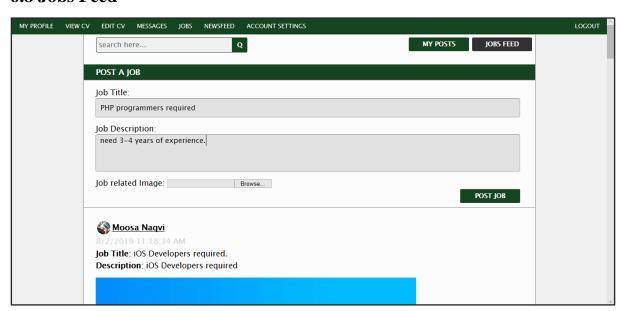


Figure 6.8.1: Jobs Feed / Post Job



Figure 6.8.2: My Jobs

6.9. News Feed



Figure 6.9: News Feed

6.10. Alumnus Account Settings

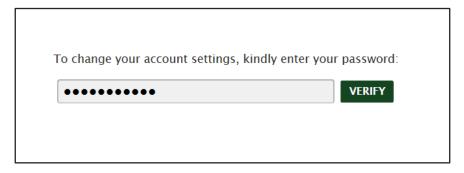


Figure 6.10.1: Verify Password

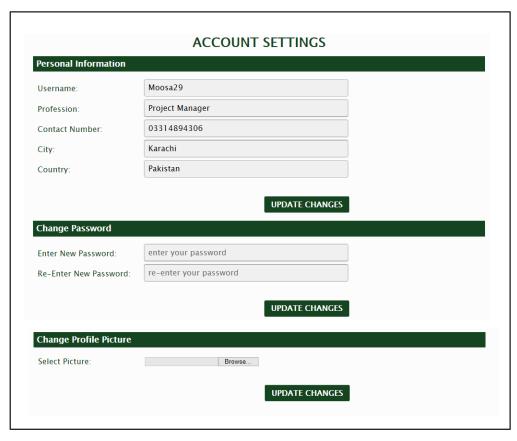


Figure 6.10.2: Alumnus Account Settings

WEBSITE - ADMNISTRATOR MODULE

6.11. Administrator Login

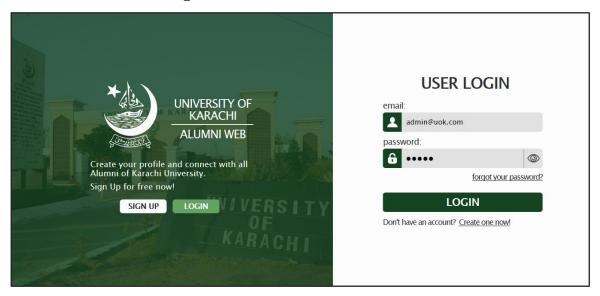


Figure 6.11: Administrator Login Page

6.12. Administrator Module

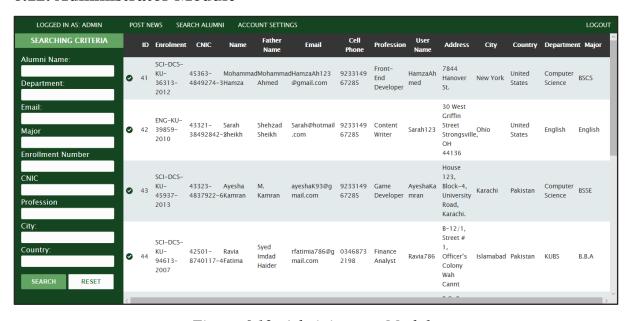


Figure 6.12: Administrator Module

6.13. Search Alumni

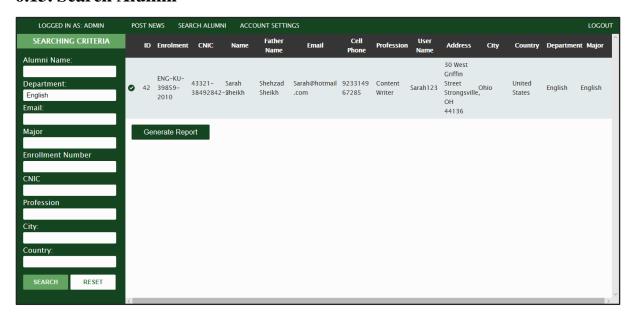


Figure 6.13: Search Alumni

6.14. Alumni Report

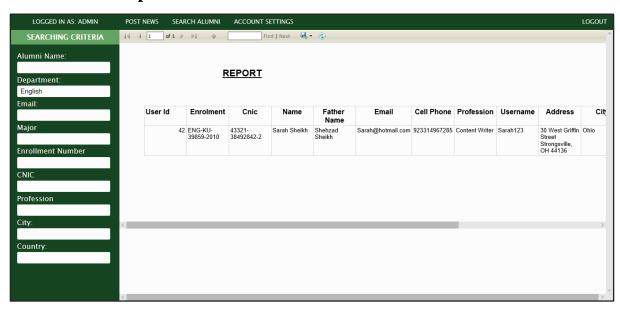


Figure 6.14: Alumni Report

6.15. Individual Alumnus Report

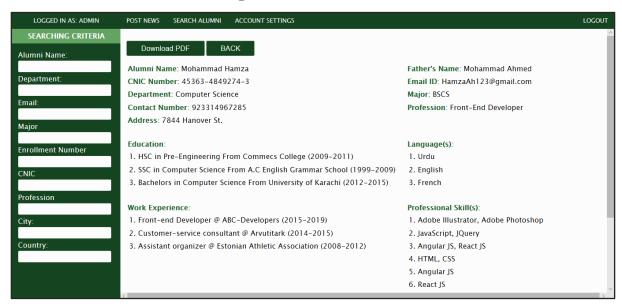


Figure 6.15: Individual Alumnus Report

6.16. Post News

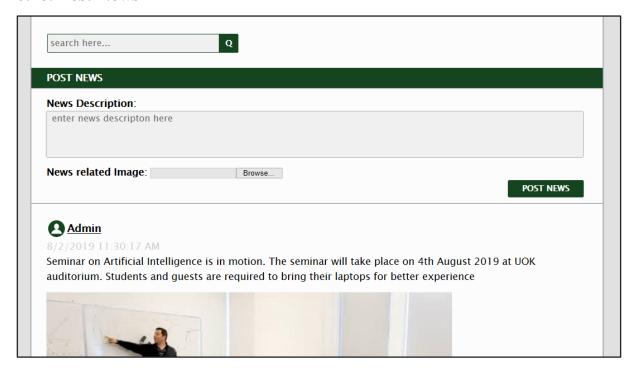


Figure 6.16: Post News

6.17. Administrator Account Settings

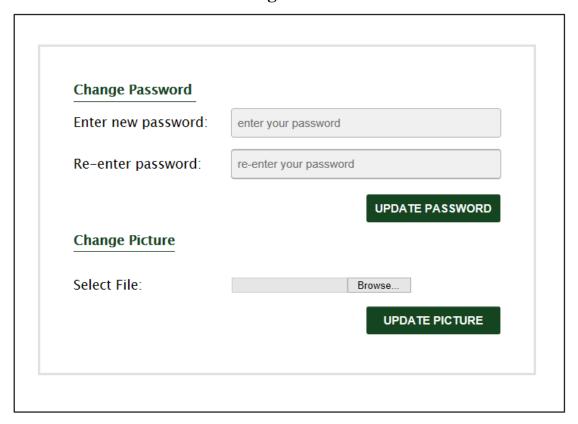


Figure 6.17: Administrator Account Settings

ANDROID APPLICATION

6.18. Splash Screen



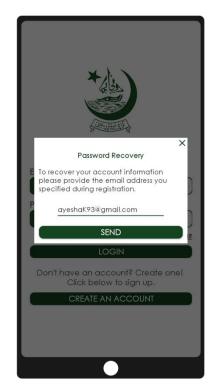
Figure 6.18: Splash Screen

6.19. Alumni Login



Figure 6.19: Alumni Login

6.20. Alumni Account Password Recovery



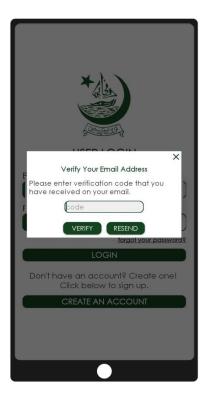


Figure 6.20: Account Password Recovery

6.21. Alumni Sign Up





Figure 6.21.1: Alumni Sign Up Step 1

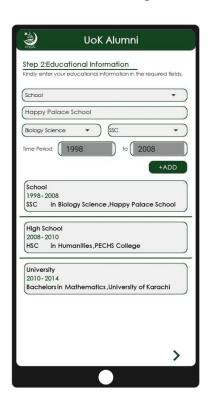




Figure 6.22.2: Alumni Sign Up Step 2 & 3

6.23. Alumni Profile



Figure 6.23.1: Alumni Profile

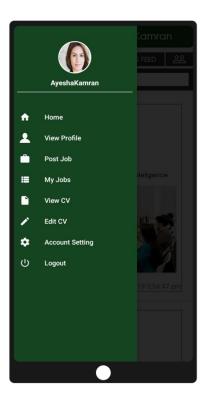


Figure 6.23.2: Navigation Drawer

6.24. View CV



Figure 6.24.1: View CV



Figure 6.24.2: CV PDF

6.25. Edit CV



Figure 6.25.1: Edit CV – View 1



Figure 6.25.3: Edit CV – View 3

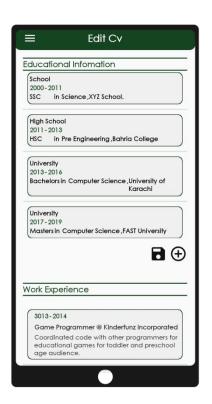


Figure 6.25.2: Edit CV – View 2



Figure 6.25.4: Edit CV – View 4

6.26. Jobs Feed



Figure 6.26.1: Jobs Feed



Figure 6.26.2: Post Job



Figure 6.26.3: My Jobs

6.27. Networks

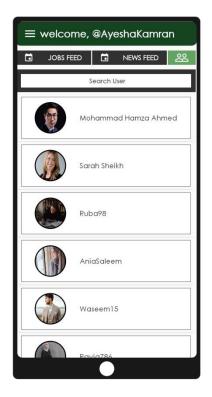


Figure 6.27.1: Networks List

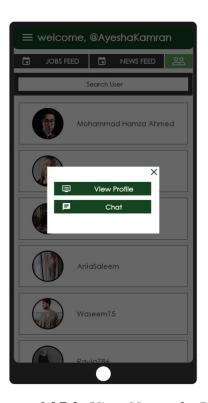


Figure 6.27.2: View Networks Profile

6.28. Messages

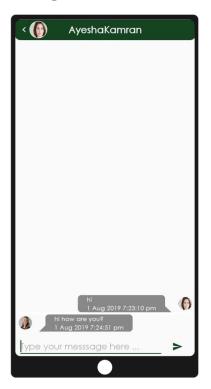


Figure 6.28.1: Messages

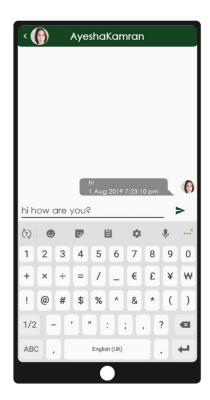


Figure 6.28.2: Send Message

6.29 News Feed



Figure 6.29: Newsfeed

6.30. Account Settings



Figure 6.30: Account Settings

7. CONCLUSION AND FUTURE ENHANCEMENTS

In this section, we present our conclusions and discuss the future improvements that can be made in our project.

7.1 Conclusion

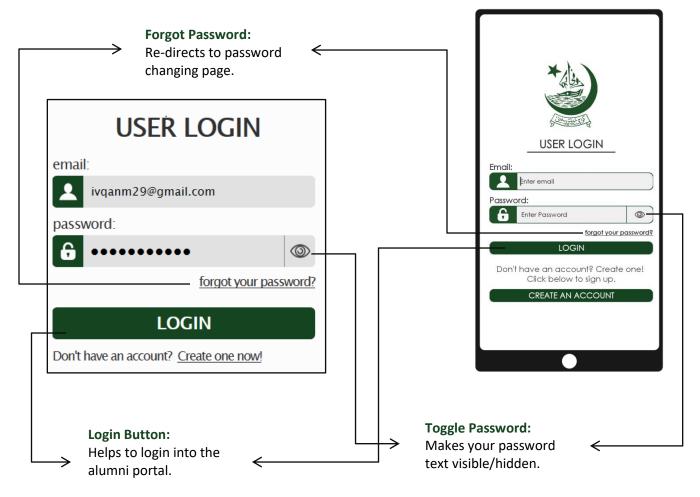
Despite the flaws and risks involved in the project, UOK Alumni Portal is a good platform to connect Alumni of University of Karachi over a common platform. The Portal offers completely necessary functionality that most users in this decade clearly demand for. It holds great importance in the business world as it is the age of social media. The Portal is also beneficial for the University of Karachi administration as it is a way for them to track their graduated students and connect with them once again. The portal gives much good exposure to the world of our university and presents a great image of our Alumni's success.

7.2 Future Enhancements

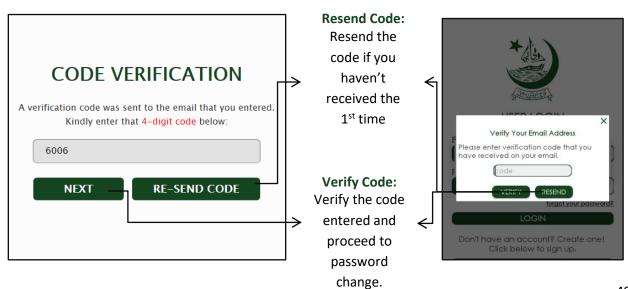
Even though our team gave its complete efforts possible in creating this project, there are still many areas where the project can be improved. Both front-end and back-end development could be adjusted to latest technology that is preferred over the technology we used. Our project can be adjusted to newer technology without disrupting the basic foundation of the project. We hope to work on this project further and aim to build a better version of it, containing fewer bugs and problems.

APPENDIX A: USER MANUAL

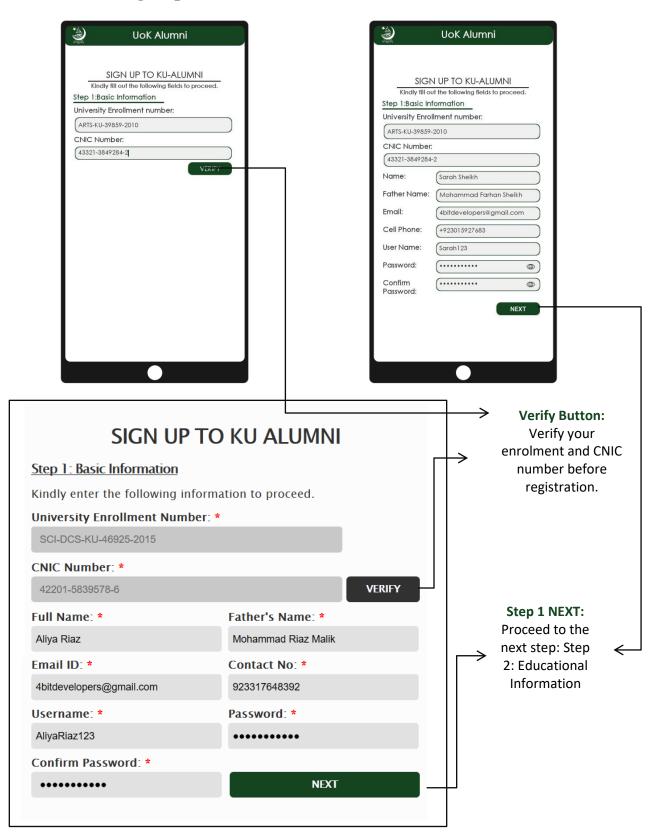
1) Alumni Login

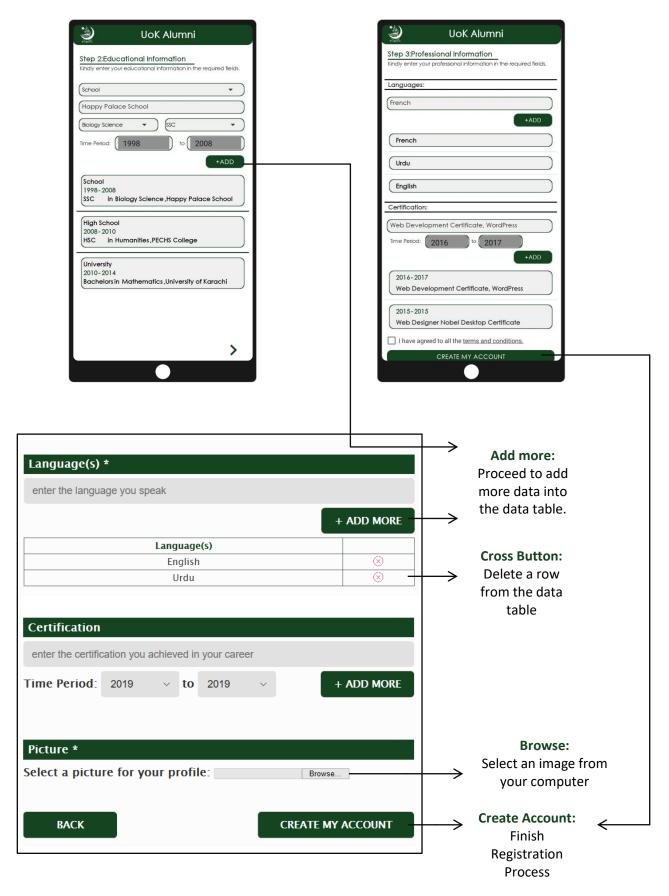


2) Forgot Password

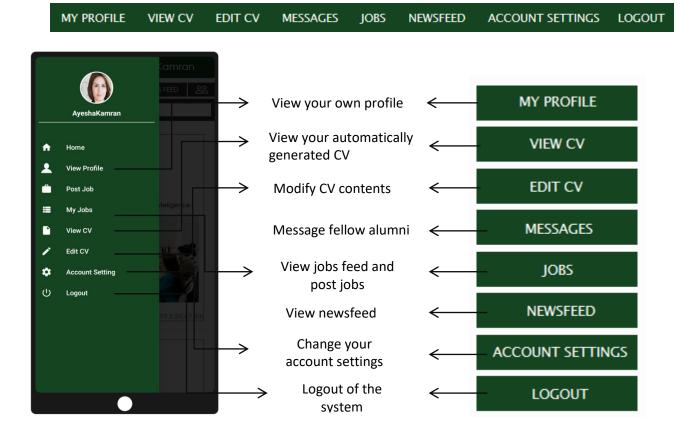


3) Alumni Sign Up





4) Portal Navigation



5) Administrator Module

